



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
JUNE 7, 1996, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM**

Present:	T. A. Coleman	G. D. Taylor	L. R. Brown
	J. D. Culp	C. T. Maki	P. A. Lynwood (P. F. Miller)
	J. W. Reincke	W. C. Turner	E. D. Winkler

OLD BUSINESS

1. Approval of the Minutes of the May 2, 1996, Meeting -T. A. Coleman

Minutes of the May 2, 1996, meeting were approved as written.

2. Status of Bridge Scoping Process Improvement - L. R. Brown

The current process for selecting bridge projects begins with collecting individual bridge condition data and ends with a statewide list of approved projects (time line for the 1996 Call for 1998 Bridge Project Process attached). This list is subsequently sent through the Design process, which produces the plans for letting. Projects that will be let to contract in fiscal year 97/98 are based on condition information collected in fiscal year 94/95. The bridge inspections performed by Maintenance is based on two requirements. One is for the National Bridge Inventory and the other is for the currently selected Bridge Management System called PONTIS. It is anticipated that PONTIS will eventually become the main inspection method.

After the bridges are inspected and candidate projects are "short listed" based on available funding, these potential projects are reviewed by each district to determine how they fit into their own planned road program or other local bridge priorities. Projects are then subject to detailed scoping, which eventually serves as the major input for design.

ACTION: The Maintenance Division will continue to work with the Design Division on the development of the Bridge Management System, with periodic updates presented to the committee.

3. Final Report (Executive Summary), *Safety Issues and Operational Treatments for Tight Diamond Ramps With Intersection Sight Distance Problems* - J. D. Culp

The consultant engaged to investigate *Safety Issues and Operational Treatments for Tight Diamond Ramps With Intersection Sight Distance Problems* submitted the final report and a request for MDOT's approval to present a TRB paper on the process used. The report identifies areas with deficient sight distance.

The committee was requested to approve the following:

- A. Publish the executive summary. Retain full report for departmental use only.
- B. Approve the implementation plan.

- C. Allow the consultant to prepare a draft TRB paper and submit it to the department for approval.

ACTION: The committee approved Item A, with the stipulation that revision will be incorporated as discussed, and Item B and Item C disapproved.

NEW BUSINESS

1. **Warranties: Bituminous Construction Projects or Concrete - T. A. Coleman**

We will be doing more projects if a gas tax passes. Also, some current roadway pavements are experiencing early rutting or lifting, cracks, etc. Major issues involve staff levels, design mixes, MDOT controls and warranties. Potential alternatives to address the roadway problems are:

- A. Do more projects by warranty contracts;
- B. Engaging consultants to perform construction management services; or
- C. A combination of Items A and B.

The FHWA has expressed an interest in seeing contracts entered into for warranties for up to five years.

There are several issues and questions that must be addressed before any formal action is taken, such as: What are the mechanics required to implement this type of program. . . bonding companies, contractors, etc.; we have only limited experience.

ACTION: The Design Division, specifically the US-23 Project Group chair by Bil Turner, is charged to review on-going activities and provide recommendations for an approach to implement warranty contracts by January 1997. The Construction Division is charged to review and present a plan to engage consultants for construction management services for the 1997 construction season. An initial progress report is requested for the July 1996 meeting.

2. **Rumble Strip Preservation - J. D. Culp**

Preservation of rumble strips is critical to maintaining the safety attributes of our roadways to alert drivers when leaving the pavement mainline. However, as part of our maintenance preservation projects; the rumble strips are being filled with slurry seal or microsurfacing over rumble strips.

ACTION: The Maintenance Division is requested to alert districts regarding policy on preserving rumble strips, and to seek a solution for preventative maintenance jobs. The Traffic and Safety, and Design Divisions are charged to review rumble strip standards, develop a standard plan with an acceptable pattern for bituminous/concrete projects, and provide recommendations for future improvements. A progress report will be presented at the scheduled July 1996 meeting.

3. **Advanced Composite Material (ACM) in Highway Structures - J. W. Reincke**

A need has been defined for the development of effective retrofit techniques to repair due to aging and environmental factors using ACMs, along with developing non-corrosive deck reinforcement. The committee is requested to approve the research projects and funding as presented below:

- A. ***Non-Metallic Reinforcement of Concrete Bridge Decks*** - The goal in this project is to develop and implement materials selection criteria, design procedures, and construction techniques for the reinforcement of concrete bridge decks in Michigan with non-corroding and durable polymeric composite systems. State Planning and Research funds in the amount of \$265,828 are needed for this project.
- B. ***Polymer Composite Jackets for Column Repair*** - The objective of the project is to investigate the use of composite jackets for repairing rectangular and circular chloride contaminated bridge columns whose reinforcement is corroded. The jacketing system that is selected must be durable under Michigan's harsh environment, should not require expensive specialized equipment, should be able to be installed by local crew with a minimum of training, and should withstand exposure to fire, ultraviolet light and vandalism. State Planning and Research funds in the amount of \$191,181 are needed for this project.
- C. ***Repair and Strengthening of Reinforced and Prestressed Concrete Beams Using External Glued-on CFRP Plates*** - This proposal provides experimental verification and recommendations for implementation of a new technology, in which thin fiber reinforced plastic laminates are glued-on the surface of concrete beams to strengthen them in bending, shear, or both. In order to ascertain the reliability of this new technique for the particular Michigan environment, special tests carried out on low temperature and repeated overloads tests, and freeze-thaw tests, are proposed. Deliverables range from a literature survey to field monitoring of the application of the technique to a Michigan bridge, as well as bridge testing before and after strengthening. Materials and Technology Division research funds for matching Great Lakes Center of Truck Transportation Research funds are needed for this project. Total project cost is \$189,916.

ACTION: The three research projects were approved as presented.

4. **Galvanized Guardrail - J. D. Culp**

Industry is requesting MDOT's reconsideration for the use of pre-galvanized guardrail beam to be used in addition to the post galvanized product currently specified. Internal reviews revealed that the Traffic and Safety, and Maintenance Divisions are opposed to modification to existing specifications based on their past experience.

ACTION: The Materials and Technology Division is requested to conduct a technical review of documentation presented on pre/post rolled galvanized material and present their findings at the July 1996 meeting.

5. **Guardrail Endings - T. A. Coleman**

Cost for the installation of guardrail endings on projects recently completed are excessive in comparison to previous installation costs. Due to the availability of a limited number of suppliers capable of providing these endings, concerns were expressed that there is an issue of sole proprietary of the product.

The FHWA recently provided additional documentation on tests (SRT-350) for guardrail endings.

ACTION: The Traffic and Safety Division is charged to take this issue back to the Barrier Advisory Committee for review and present a report to the committee recommending a competitive product as soon as possible.

(Signed Copy on File at M&T)

Calvin Roberts, Secretary
Engineering Operations Committee

Attachment

cc: EOC Members
District Engineers

R. A. Welke

D. L. Coleman

D. L. Smiley

L. E. DeFrain

I. B. Patel

S. Bower

R. J. Risser, Jr. (MCPA)

L. W. Martin (MRBA)

J. Becsey (MAPA)

G. L. Mitchell

M. Newman (MAA)

M. Frierson

L. K. Heinig

G. H. Grove

R. W. Muller

G. J. Bukoski

J. Steele (FHWA)

R. J. Lippert, Jr.

T. Adams (MCA)

R. D. Till

R. E. Nordlund

C. W. Whiteside

K. Rothwell

C. Libiran